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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/733,246	12/08/2000	Daniel R. Gaur	42390P10203	9965

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EXAMINER	
KLINGER, SCOTT M	
ART UNIT	**PAPER NUMBER**
2153	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/733,246	GAUR, DANIEL R.	
	Examiner	Art Unit	
	Scott M. Klinger	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *12 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-29 are pending.

Claims 25-29 are new.

Priority

No claim for priority has been made. The effective filing date for subject matter in the application is 8 December 2000.

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground of rejection. The new ground of rejection was necessitated by applicant's amendment.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "the cache" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the cache" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 6, 11, 12, 16, 21, 22, 25, 27, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugai et al. (U.S. Patent Number 6,683,885, hereinafter "Sugai") in view of Spencer et al. (U.S. Patent Number 6,772,295, hereinafter "Spencer"). Sugai discloses a network relaying apparatus and network relaying method. Sugai shows,

In referring to claims 1, 6, 11, 16, 21, 25, 27, and 29, Sugai shows substantial features of the claimed invention, including:

- Storing, in a host memory, protocol headers and application data into packet buffers:
  Sugai, Fig. **3** shows the step of storing a packet into a packet buffer (Sugai, Fig. **2, 12**)
- Storing in a cache on the network adapter at least one MAC header:
  Sugai, Fig. **3** shows the step of storing a header into header RAM (Sugai, Fig. **2, 11**)
- Transmitting the stored packet buffers and stored MAC header across a network:
  Sugai, Fig. **3** shows the step of producing the packet and outputting said packet

However, Sugai does not show selectively retrieving the selected MAC header from the cache or host memory based, in part, on whether the selected MAC header was previously transmitted. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Sugai as evidenced by Spencer.

In analogous art, Spencer discloses a system and method for managing data in an I/O cache. Spencer shows: *"At some point, however, all data lines 234 of the cache memory 126 will be*

occupied. At this point, the cache memory 126 must discard at least one line 234 of data, in order to make space available for new data to be read into the cache 126. As previously mentioned, there are a wide variety of algorithms and methods that are known for determining which lines or lines 234 of data to discard from the cache 126. Preferably, an algorithm is chosen that will discard those data lines 234 which are least likely to be used again in the near future." (Spencer, col. 7, lines 52-59)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Sugai so as to determine if the MAC header is different from to a MAC header previously transmitted and store the MAC header if it is different, such as taught by Spencer, in order to reuse stored information to speed up the data transmission.

In referring to claims 2, 12, and 22, Sugai in view of Spencer shows,

- Storing in the host memory a tag indicating a location of the selected MAC header in the cache; retrieving the tag; and wherein the transmitting includes accessing the selected MAC header at the location in the cache indicated by the tag:

  A system that stores a MAC header in memory and then later accesses said memory when the MAC header is to be transmitted inherently implies a pointer (or tag) to the memory location of the stored MAC header

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Claims 3-5, 7-9, 10, 13-15, 18-20, 23, 24, 26, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugai in view of Spencer and in further view of Richman et al. (U.S. Patent Number 6,336,152, hereinafter "Richman").

In referring to claims 3-5, 7, 13-15, 23, and 24, although Sugai in view of Spencer shows substantial features of the claimed invention, including those described above (see rejections for claims 1, 11, and 21), Sugai in view of Spencer does not show sending the data to the network adapter via a DMA controller. Nonetheless this feature is well known in the art and would have

been an obvious modification to the system disclosed by Sugai in view of Spencer as evidenced by Richman.

In analogous art, Richman discloses a method for automatically configuring devices including a network adapter without manual intervention and without prior configuration information. Richman shows protocol headers and application data are sent from a client to the adapter via a DMA controller: *"The computer includes various resources, including interrupts, direct memory access (DMA) channels, memory addresses, and input/output (I/O) ports, at least one system bus, and devices. System busses are components that supply physical connections to devices. Each of the devices is connected to one of the system busses of the computer."* (Richman, col. 3, lines 62-67).

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Sugai in view of Spencer so as to send the data to the network adapter via a DMA controller, such as taught by Richman, in order to increase transmission speed.

In referring to claims 8, 10, 18, 20, 26, and 28, Sugai shows substantial features of the claimed invention, including:

- A processor having a host memory to store protocol headers and application data into packet buffers:
  "FIG. 1 is a diagram showing a configuration of a network relaying apparatus according to this invention. A router 1 includes a plurality of routing processors (RP) 10, a crossbar switch (CS) 20, at least a network interface (NIF) 30, at least a port 40, a routing manager (RM) 60 and a power supply (PS) 70." (Sugai, col. 4, lines 52-57)
  Sugai, Fig. **1** shows the processor **10**; Sugai, Fig. **2** shows a packet buffer **12**
- A network adapter having a local cache capable to store at least one MAC header:
  Sugai, Fig. **2** shows a header RAM to store a MAC header **11**

However, Sugai does not show selectively retrieving the selected MAC header from the cache or host memory based, in part, on whether the selected MAC header was previously transmitted. Nonetheless this feature is well known in the art and would have been an obvious

modification to the system disclosed by Sugai as evidenced by Spencer.

In analogous art, Spencer discloses a system and method for managing data in an I/O cache. Spencer shows: *Spencer, col. 7, lines 52-59* (see full quote above)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Sugai so as to determine if the MAC header is different from to a MAC header previously transmitted and store the MAC header if it is different, such as taught by Spencer, in order to reuse stored information to speed up the data transmission.

Although Sugai in view of Spencer shows substantial features of the claimed inventioin, Sugai in view of Spencer does not show sending the data to the network adapter via a DMA controller. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Sugai in view of Spencer as evidenced by Richman.

In analogous art, Richman discloses a method for automatically configuring devices including a network adapter without manual intervention and without prior configuration information. Richman shows protocol headers and application data are sent from a client to the adapter via a DMA controller: *"The computer includes various resources, including interrupts, direct memory access (DMA) channels, memory addresses, and input/output (I/O) ports, at least one system bus, and devices. System busses are components that supply physical connections to devices. Each of the devices is connected to one of the system busses of the computer."* (Richman, col. 3, lines 62-67).

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Sugai in view of Spencer so as to send the data to the network adapter via a DMA controller, such as taught by Richman, in order to increase transmission speed.

In referring to claim 9 and 19, Sugai in view of Spencer and in further view of Richman shows,

- Said processor is operative to store in the host memory a tag indicating a location of the MAC header in the cache and operative to retrieve the tag from host memory and pass the

tag to the network adapter; and wherein said network adapter is responsive to the tag being passed by the processor to access the stored MAC header at the location indicated by the tag when transmitting the MAC header across a network:

A system that stores a MAC header in memory and then later accesses said memory when the MAC header is to be transmitted inherently implies a pointer (or tag) to the memory location of the stored MAC header

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Klinger whose telephone number is (571) 272-3955. The examiner can normally be reached on M-F 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott M. Klinger
Examiner
Art Unit 2153

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